

REMARKS

Reconsideration and allowance of this application are respectfully requested. Claims 1-14, 17-25, 27-34, and 36-44 remain pending. Claims 15-16, 26, and 35 were previously canceled. By this communication, claims 1, 12, 24, and 36 are amended.

Claim Objection(s)

Claim 12 is objected to as allegedly further limiting the claim from which it depends. Claims 1 and 12 have been amended to clarify that it is the sensor control unit that specifically corrects the user-to-user variation of the biomedical signals which are output from the sensor unit. Applicants have deleted the recitation "correcting user-to-user variation based on values of the detected biomedical signals being within a range of respective threshold levels" of claim 1, the independent claim from which claim 12 depends.

Thus, withdrawal of this objection is respectfully requested.

Rejections Under 35 U.S.C. § 103

Claims 1-14, 17-25, 27-34, and 36-44 - Teller/Khair

Claims 1-14, 17-25, 27-34, and 36-44 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Teller et al.* (U.S. Patent No. 7,261,690, hereinafter *Teller*) in view of *Khair et al.* (U.S. Patent Publication No. 2002/0109621, hereinafter *Khair*). Applicants respectfully traverse this rejection.

Applicants submit that *Teller* does not teach "a subtracter unit that obtains differences between the extracted feature values from the feature analysis unit and predetermined feature values, **and** a support vector machine (SVM) unit that classifies the user's emotional state by respective emotions in accordance with the

differences of the feature values obtained by the subtracter unit," as recited in independent claim 1 and as similarly recited in independent claim 24.

Teller discloses a Health Manager utility through which a central monitoring unit 30 provides data to a user generated from data it collects or generates, such as data indicative of, and derived from, physiological parameters generated by a sensor device 10 and data input by the user. (*Teller* at col. 16, lines 48-63 and Figure 1). A Mind Centering category is designed to help users monitor parameters relating to time spent engaging in certain activities which allow the body to achieve a state of profound relaxation while the mind becomes focused, and is based upon both data input by the user and data sensed by the sensor device 10. (*Teller* at col. 19, lines 31-44). *Teller* describes that a Mind Centering Health Index piston level is preferably calculated with respect to a suggested healthy daily routine that includes participating each day in an activity that allows the body to achieve profound relaxation while the mind stays highly focused for at least fifteen minutes, and that parameters utilized in the calculation of the relevant piston level include the amount of time spent in a mind centering activity and the percent change in skin temperature, heart rate, respiration rate, heat flow or GSR, as sensed by sensor device 10, compared to a baseline which is an indication of the depth or quality of the mind centering activity. (*Teller* at col. 19, lines 31-44).

Thus, while *Teller* describes calculating a depth or quality of a mind centering activity based on percent changes in sensed physiological parameters, nowhere does *Teller* teach "a subtracter unit that obtains differences between the extracted feature values from the feature analysis unit and predetermined feature values, and a support vector machine (SVM) unit that ***classifies the user's emotional state by respective emotions in accordance with the differences of the feature values***

obtained by the subtracter unit," as recited in amended claim 1 and as similarly recited in independent claim 21 (emphasis added).

On page 12 of the previous Office Action dated March 31, 2008, the Office alleges that the word "for" is a recitation of the intended use, and as such, the claimed invention must result in a structural difference between the claimed invention in order for the prior art to patentably distinguish the claimed invention. The Office further asserts that the invention of *Teller* contains the structure for determining the emotional state based on differences in the measured physiological signals, and that the invention of *Teller* performs the function of classifying the emotional state. Applicants respectfully disagree.

Applicants recognize that mere statement of intended use is of no patentable weight in claims drawn to structure (*In re Minks*, 169 USPQ 120, (1969)). However, the recitation "a subtracter unit that obtains differences between the extracted feature values from the feature analysis unit and predetermined feature values, and a support vector machine (SVM) unit that classifies the user's emotional state by respective emotions in accordance with the differences of the feature values obtained by the subtracter unit" is not a statement of intended use of the claimed subject matter. Rather, it is a positive recitation of the functionality of the claimed structure, and entitled to patentable weight. The Office has not established that this claimed functionality is inherent in the structure of *Teller*. In fact, as described above, the functionality of the claimed device structure differs from that of the device structure of *Teller*. However, to expedite prosecution of the instant application, Applicants have amended the claims in an effort to address the Office's concern regarding the intended use language.

Khair is not purported by the Office to teach "a subtracter unit that obtains differences between the extracted feature values from the feature analysis unit and predetermined feature values, and a support vector machine (SVM) unit that classifies the user's emotional state by respective emotions in accordance with the differences of the feature values obtained by the subtracter unit" as recited in claim 1. Therefore, *Teller* or *Khair*, alone or in combination, fails to disclose or suggest all of the features as recited in claim 1 or corresponding method claim 24. Claims 2-14, 17-23, 25, 27-34, and 36-44 are also distinguishable by virtue of their dependency from either independent claim 1 or 24, and for the additional features recited therein. Thus, it is respectfully requested that the rejection to claims 1-14, 17-25, 27-34, and 36-44 be withdrawn.

Claims 1-8, 10-11, and 17 - Ark/Khair

Claims 1-8, 10, 11, and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Ark et al.* (U.S. Patent No. 6,190,314, hereinafter *Ark*) in view of *Khair*. Applicants respectfully traverse this rejection.

Applicants submit that *Ark* does not teach "a subtracter unit that obtains differences between the extracted feature values from the feature analysis unit and predetermined feature values, and a support vector machine (SVM) unit that classifies the user's emotional state by respective emotions in accordance with the differences of the feature values obtained by the subtracter unit," as recited in independent claim 1. *Ark* discloses a method and system for correlating physiological attributes including heart rate, temperature, general somatic activity, and galvanic skin response to emotions of a user. (*Ark*, Abstract). In the system,

there includes one or more input devices (e.g., a mouse and a keyboard) for manipulation of the input devices to input data to a computer via respective input cables. (*Ark* at col. 3, lines 13-17 and Figure 1). The computer outputs data to one or more output devices (e.g., a monitor). (*Ark* at col. 3, lines 17-18). Sensors are in the mouse to sense the physiological attributes of the user, which are correlated to emotions using a correlation model. (*Ark*, Abstract). The correlation model is derived from a calibration process in which a baseline attribute-to-emotion correlation is rendered based on statistical analysis of calibration signals generated by users having emotions that are measured or otherwise known at calibration time. (*Ark*, Abstract). A vector in N dimensions, representative of a subject user's emotions, is output for subsequent subject users whose emotions are sought to be known, with the baseline being the reference in the N-dimensional space of the vector. (*Ark*, Abstract).

Contrary to the position taken by the Office, Applicants respectfully submit that *Ark* fails to teach or suggest "a physical condition analysis unit that analyzes the user's physical condition based on the classified biomedical signals input from the biomedical signal measurement module and the user's physical information," as recited in claim 1. While *Ark* describes using sensors on a computer input device to generate physiological signals for a user, and correlating the physiological signals to one or more emotions, nowhere does *Ark* describe analyzing the user's **physical condition** (e.g., body fat percentage) based on the biomedical signals (e.g., body impedance value) and the user's physical information (e.g., the user's height, weight, etc.). (See, Specification at page 22, lines 17-22, *Ark* at col. 2, lines 12-50).

Moreover, based on the above discussion, Applicants submit that *Ark* does not teach or suggest "a subtracter unit that obtains differences between the extracted

feature values from the feature analysis unit and predetermined feature values, and a support vector machine (SVM) unit that classifies the user's emotional state by respective emotions in accordance with the differences of the feature values obtained by the subtracter unit" as recited in claim 1.

On pages 11-12 of the previous Office Action dated March 31, 2008, the Office, also in reference to *Ark*, alleges that the word "for" is a recitation of the intended use, and as such, the claimed invention must result in a structural difference between the claimed invention in order for the prior art to patentably distinguish the claimed invention. The Office further asserts that the device of *Ark* comprises the structure to perform the function of determining the user's emotion. Applicants respectfully disagree.

As similarly discussed above in reference to *Teller*, Applicants recognize that mere statement of intended use is of no patentable weight in claims drawn to structure (*In re Minks*, 169 USPQ 120, (1969)). However, the recitation "a subtracter unit that obtains differences between the extracted feature values from the feature analysis unit and predetermined feature values, and a support vector machine (SVM) unit that classifies the user's emotional state by respective emotions in accordance with the differences of the feature values obtained by the subtracter unit" is not a statement of intended use of the claimed subject matter. Rather, it is a positive recitation of the functionality of the claimed structure, and entitled to patentable weight. The Office has not established that this claimed functionality is inherent in the structure of *Ark*. In fact, as described above, the functionality of the claimed device structure differs from that of the device structure of *Ark*. However, to expedite prosecution of the instant application, Applicants have amended the claims in an effort to address the Office's concern regarding the intended use language.

Khair is not purported by the Office to teach "a subtracter unit that obtains differences between the extracted feature values from the feature analysis unit and predetermined feature values, and a support vector machine (SVM) unit that classifies the user's emotional state by respective emotions in accordance with the differences of the feature values obtained by the subtracter unit." Therefore, *Ark* or *Khair*, alone or in combination, fails to disclose or suggest all of the features as recited in claim 1. Claims 2-8, 10-11, and 17 are also distinguishable by virtue of their dependency from independent claim 1, and for the additional features recited therein. Thus, it is respectfully requested that the rejection to claims 1-8, 10-11, and 17 be withdrawn.

Conclusion

Based on at least the foregoing amendments and remarks, Applicants submit that claims 1-14, 17-25, 27-34, and 36-44 are allowable, and that this application is in condition for allowance. Accordingly, Applicants request a favorable examination and consideration of the instant application. In the event the instant application can be placed in even better form, Applicants request that the undersigned attorney be contacted at the number below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: November 18, 2008

By:


Tremesha S. Willis
Registration No. 61,830

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620